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617.

This air pressure In and Exhaler, first described in the *Medical Record*, issue of February 10, 1894, has gained for itself an enviable reputation for its efficacy and as an aid in the arrest of consumption.

It has proved itself a lung developer of greater force than its diminutive size would seem to warrant; for when used with the persistency, regularity and energy intended by its originator, few methods of pulmonary gymnastics can equal this gently persuasive influence on the closing air-cells and bronchioles of a chronically affected or inefficient lung.

The results obtained by the author both of increased spirometrical and manometer power and of lung development have been noted by others; while, incidentally, due to the anodyne and antiseptic effects of vaporizable oils and odorous salts used, cough and irritation of the trachea and bronchial tubes have very generally been allayed; cavities in the lungs and bronchial dilatations have been ventilated and strengthened as to their peripheries, and furthermore rendered as nearly aseptic as possible. The latter effect has been shown by the decreasing number of strepto-cocci and diplo-cocci, as well as of bacilli in the sputum of cases with the often found "mixed infection." This decrease is not only as to the total amount of expectoration in patients using the In and Exhaler, but relatively as to the proportion of these evidences found before treatment was commenced.

In the connective tissue increase, which always accompanies chronic pulmonary disease (and an especially prominent feature in fibroid and chronic catarrhal pneumonias, chronic pleurisy and bronchitis, and always aggravated in tubercular infection) we need to get up a resulting opposition to the shrinkage. With this inhaling method this is in no small degree accomplished through the artificially increased density or pressure of the contained air in the lungs *during expiration*. This opposition must be as persistent as is the influence it is intended to combat. Hence the convenience of this pocket method, which is always on hand for a five or ten minutes use in each of ten or twelve separate hours of the day.

The nasal nozzle addition, lately devised, introduces new uses of the In and Exhaler. The increased air pressure during expiration should not equal that usually employed with the lung method; yet in the head use a certain amount of air tension can be seen to be desirable in driving into closed cavities and against hypertrophied membranes, the oily, astringent, pungent, antiseptic, soothing or anodyne vapors selectable for this method. The inlet valve had better be left quite open, and the outlet valve instead of 9-10 to 5-10 shut, as in pulmonary use, 9-10 to 5-10 open. Even then pressure can be produced (partly indicated by the clicking of the closing exit valve during expiration), sufficient to drive the previously medicated air into the middle ear, similar to the Politzer air bath method.

The advantage of this method in post-nasal catarrh; with extension to the middle ear cavities (otitis media and its resulting deafness) and in hypertrophic rhinitis can easily be conceived by one of mechanical tendency of mind.

At the same time the large and extremely sensitive area in the nasal passages to receive the impression of menthol producing oils and salts, of antiseptic vapors and of anodyne ethers, makes this way to reach many troublesome ills far better than to crowd the stomach with drugs, as is too often done for la grippe, headache, hay fever, catarrh, frontal neuralgia, angina pectoris and asthmatic or epileptic seizures. It is in such conditions as these last mentioned that the nose avenue of using the In and Exhaler opens up a new method of relieving a large class of vexatious, prevalent and even fashionable, although not extremely dangerous, diseases. Such a little vest pocket device then, suitable as this is to hold and surrender at will, many combinations of healing vapors and soothing odors, is bound to prove itself a boon and comfort to many semi-invalids—the catarrhal and neuralgic degenerates—as well as to those really and seriously ill.

Now as to the remedies which can be used on the absorbent in the medicament chamber, the reason a physician cannot ordinarily duplicate the two inhalents (one for lung use and one for head use) which go with the Inhaler and the two nozzles, as supplied by the Denver Surgical Instrument Co., is that drug stores do not make a practice of giving out the finest oils in filling prescriptions.

* [Reprinted from the Dietetic and Hygienic Gazette of June, 1897.]

They prefer or are accustomed to use the cheaper varieties which are either disagreeable or not menthol producing. Take for instance the three following, which, by the way, make a very excellent basis for many prescriptions. First the oil of pine needles, nothing in this line equals Merck's "Olium Pini Pumillonis" for amount of menthol and delicacy of aroma. Second, the Tyndale Oil of Eucalyptus, in fine fragrance and volatility of its menthol principle, is far superior to the many cheap oils found in drug stores, of $\frac{1}{3}$ or $\frac{1}{2}$ its original cost. Third, the Schering and Glatz Liquid Guiacol furnishes a very useful means of carrying the antiseptic creosote principle in volatile form to the mucous membranes of the respiratory tract. In the nasal passages the Guiacol vapors have an anodyne and numbing as well as antiseptic effect. This fact renders this preparation especially valuable as a base in conjunction with Eucaine with or without Camphor Chloral, the Oleoresin of Lupulin, "A. C. E." etc., when a soothing influence is needed, as in headache, either of neuralgic character or such as accompanies la grippe, coryza, ozena, etc. "Eosot" and "Geosot" are also excellent.

It is, however, in spasmoid seizures, such as angina pectoris and some epileptiform attacks, where quick relief is desired to be at hand, that this new form of the In and Exhaler is quite serviceable. This happens through the excellent control that the user has of some otherwise dangerous remedies, as Nitrite of Amyl, Chloroform, etc. Then no other method equals this, so far as relates to the safety, convenience and economy in the amount of such remedies used. A few drops of a two to a five per cent solution of Nitrite of Amyl in alcohol is sufficient on the absorbent in the medicament chamber for an ordinary attack of angina pectoris; and the same can be kept shut up in the inhaler box under the patient's pillow for use as needed at night.

Or a better form for such cases, and certain forms of asthma, is some modification of the following:

B. Eucaine 5 per cent, Nitrite of Amyl 3 per cent, in equal parts of "A. C. E.", Camphor, Chloral and Oil of Eucalyptus; or to two parts "A. C. E." and one of Chloral Camphor, 10 per cent of Eucaine, and 5 per cent of Amyl Nitrite can be added, and an anodyne effect will be produced by inhaling 5 to 15 drops of it, which will be sufficient in five to ten minutes to overcome spasm, to relieve headache and induce sleep to a degree which cannot be accomplished by dosing the stomach with drugs, except by the use of large and injurious quantities. It is doubtful anyway if the habit of drug taking has any defense in preference to such milder means, especially where only such transient effects are desired.

It is not intended to infer a claim that this little device is a "cure-all." Not at all. If, as is the author's custom, this is used in conjunction with an out-door life in this rarefied pure air of Colorado; if besides, the patient is individualized as to his diet, tonics and personal hygiene; if the help is added which one can derive from the assiduous and well directed teaching of an expert in gymnastic training, or even, in a case otherwise too difficult or complicated for the climatic cure, if one trusts to the immunizing influence of Antiphthisin or Purified Tuberculin, he in so far shows that he has no desire to magnify the inhaler's effects above the average of any of these means. It is only as an aid to other intelligent handling of a case that this pocket affair is recommended. At the same time it does seem, from experience up to date, that this aseptic healing and gymnastic method might prevent many a narrow-chested and thin-blooded youth from ever having to resort to a climate like this, if, in the beginning of his trouble, he could be continuously braced up by this or an equivalent pulmonary method. The mechanism of the thing explains where its chief utility lies, namely in *forced expiration*, and herein rests its superiority to ordinary inhalers.

Other and ordinary methods of inhaling in vogue are most of them opposed to the principle of distension of the lungs here advocated. The inspiration through a medicated sponge, muslin or packed gauze device, obstructing the air like nasal obstruction,* has a tendency to draw together the air cells, and there is no after exercise effect to counteract this contracting influence in the lungs. Consequently, while the affected lung seems to be freed of catarrhal secretions by these faulty inhaling methods, the diseased parts are left in a shrunken state, *i. e.*, worse than before. In obstructed fibroid and catarrhal lung affections the inhalation should be *free* and the exhalation intensified by increased air pressure within the chest.

This purpose is accomplished by assiduous breathing with the In and Exhaler for one-fifteenth to one-eighth of the time during the waking hours. A pocket device, not larger than a watch, it combines the equivalent in air pressure effects to the high altitudes of the Rocky Mountains with the balsamic odors of the pine forests of Florida.

* "The Causative Relation of Nasal Obstruction to Lung Disease." By the author.